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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/724,736

12/02/2003

Kyung Chul Woo

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EXAMINER

PATEL, RITA RAMESH

ART UNIT

PAPER NUMBER

1746

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
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3 MONTHS

04/19/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No. 10/724,736	Applicant(s) WOO ET AL.	
	Examiner Rita R. Patel	Art Unit 1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6 and 8-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6 and 8-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Applicant's Arguments / Amendments

This Office Action is responsive to the amendment filed on 1/22/07. Claims 1, 3, 4, 6, and 8-10 have been amended. Claims 1, 3, 4, 6, and 8-14 are pending. Claims 11-14 are new. Claims 2, 5, and 7 have been cancelled. Applicant's arguments have been fully considered and are persuasive, thus the 35 USC 102 rejections have been overcome. However, upon further consideration, the instant claims are rejected under new grounds of rejections and thus, claims 1, 3, 4, 6, and 8-14 are finally rejected for the reasons of record.

Applicant's Remarks filed 1/22/07 pertain to the former 35 USC 102 rejection, however that rejection has since been overcome and the remarks made are now moot.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 6, and 8-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai et al. herein referred to as "Arai" (US Patent No. 6,886,371) further in view of Hauch (US Patent No. 5, 493, 745).

Arai teaches a washing machine has a partial washing apparatus, which has a supersonic resonator, which is driven by an oscillator to generate supersonic vibration and a supersonic vibration horn. A washing liquid is fed to the partial washing apparatus so as to be agitated by supersonic waves, which are then fed to an article to be washed to achieve partial washing of the article. The partial washing apparatus is detachably fitted to the washing machine proper at approximately the center of a lid of the washing machine proper. The partial washing apparatus may be used as a handy-type partial washing apparatus when held at a grip portion of the partial washing apparatus (Abstract). Arai's disclosure of a pumping device 39 reads on applicant's claim for a water discharge pump; opening 2 and washing sink 6 of Arai read on applicant's claim for a tub for containing laundry; tube 25c of liquid feed tank 25 reads on applicant's claim for a water circulating pipe; and partial washing apparatus 5 encased within case 11 reads on applicant's claim for a water adsorption acceleration mean for facilitating the adsorption of water in the laundry by processing the re-circulated water. Arai's teaching of a supersonic resonator 12 reads on applicant's claim for a process incurred within a water pipe whereby water is electrically charged. Electric leads 15 of Arai read on applicant's claim for a pair of electrodes; DC motor and DC voltage source of Arai (col. 16, lines 38-46) read on applicant's claims for a power source for applying a DC voltage. Supersonic resonator 12 and supersonic vibration horn 13 of Arai read on applicant's claim for a means for generating an ultrasonic wave in the water. Vibration horn 13, as seen in Figure 6 has opposing side walls which may read on applicant's

Art Unit: 1746

claim for a pair of ultrasonic vibration plates. Furthermore, Arai discloses that the vibration horn functions at a predetermined flow rate (col. 8, lines 57-60).

Re claim 7, Arai teaches that the user presses an article 30 to be washed onto the tip 13a of the supersonic vibration horn 13 exposed from the bracket member 23, and then slides the article 30 laterally repeatedly. The synergistic effect of the washing liquid agitated by supersonic vibration and the vibrating mechanical force exerted by the tip 13a makes highly effective removal of dirt of the soiled portion 30a deposited partially on the article 30 (col. 11, lines 57-64). Said disclosure of Arai reads on applicant's claims for transducing a power of the ultrasonic wave of said ultrasonic oscillator into the mechanical vibratory energy applied to the water.

Additionally, as priorly taught, electric leads 15 read on applicant's claim for an electrical charging means. The electric leads 15 connect the supersonic resonator 12 to an oscillator 15 (See Figure 1). Oscillator 17 generates an electrical pulse signal for driving supersonic vibration. Moreover, oscillator 17 also reads on applicant's claim for an ultrasonic wave generating means (See Figures 10 and 11). Tip 13a of Arai reads on applicant's claim for one end of said water circulation pipe that is an exiting end.

Arai teaches the claimed invention except fails to teach a recirculation system wherein the water from the washing tub is recirculated to the partial washing apparatus 5. Hauch however teaches the feature of washing water recirculation in a vertical tub washing machine whereby a draining system includes two bottom drains in a wash tub connected by tubing manifold having a reversible pump: a two-way valve (change-over valve) opens one drain and closes a drain line during recirculation; for draining, a

Art Unit: 1746

second two-way valve opens the second drain and the first two-way valve closes the first drain and opens the drain line, finally the pump rotates in a second direction to drain the tub out through the drain line. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the recirculation system taught by Hauch in the invention of Arai by providing a reversing pump and recirculation pipe that leads to the partial washing apparatus for recirculating water back into the wash machine. Recirculating water in washing machines is known in the art as recirculation increases energy efficiency, conserves water, and reuses/recycles washing water replete with detergent, etc.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai and Hauch as applied to claim 3 above, and further in view of Imai et al. herein referred to as "Imai (US Patent No. 5,570,596).

Arai teaches the claimed invention, except fails to specify if any transformer power source details are provided in rectifying the incoming AC voltage to DC voltage.

However, Imai teaches a washing machine incorporating such a transformer for rectifying the output of a step-down transformer supplied with AC voltage in achieving DC voltage. Imai teaches an electrical arrangement of the washing machine wherein a rectifier circuit 39 is connected via a step-down transformer 38 to the AC power supply 33. A voltage regulator circuit 40 including a switching regulator 40a is connected to an output side of the rectifier circuit 39, so that a DC regulated voltage is supplied to a control circuit 41 (col. 5, lines 29-40). It would have been obvious to one of ordinary

Art Unit: 1746

skill in the art at the time of the invention to incorporate a step-down transformer at the supplied AC voltage in the washing machine of Arai, as taught to be known in the art of washing machines by Imai because step-down transformers allows a device that requires a low voltage power supply to operate from a higher voltage; the transformer takes in the high voltage at a low current and puts out a low voltage at a high current and thus achieving a desired DC regulated voltage. Such modification of voltages from an alternating current to a direct current is commonly known in the art of washing machines for providing an effective energy source.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Smulowitz (US Patent No. 6,612,137) teaches a magnetic/electromagnetic apparatus for laundering garments in a washing machine. Application of permanent magnetic or electromagnetism to the interior or exterior of a washing machine to elevate the normal cleaning ability of water via increasing solvency and inducing eddy currents to ionize and "soften" the water; the magnetic apparatus is submerged in washing water inside the drum of the machine, affixed to the exterior of the drum where water is contained, or to the incoming water line to the machine.

Also Inoue (Patent No. 3,518,174) teaches a water purification system for a home washing appliance, whereby electrodes 210 are powered by a DC current; a high-frequency source 216 is connected across the primary winding of a transformer 236

whose secondary windings are connected in series with respective direct-current blocking condensers 234, 235 across the electrodes 210, with additional DC blocking condensers interconnecting the electrodes.

Bianchi (US Patent No. 4,481,086) also teaches a domestic washing appliance having electrodes powered by DC current; electrodes 21, 23 are connected to a source of DC current which is applied to terminals 24 and 25 during the electrolysis operation.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

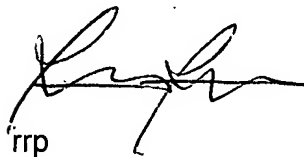
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rita R. Patel whose telephone number is (571) 272-8701. The examiner can normally be reached on M-F: 8-5.

Art Unit: 1746

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


rrp

MICHAEL BARR
SUPERVISORY PATENT EXAMINER